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09/507,423	02/18/2000	Melvin A. Park	140-033	8987

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EXAMINER

QUASH, ANTHONY G

ART UNIT PAPER NUMBER

2881

DATE MAILED: 09/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/507,423

Applicant(s)

MELVIN A. PARK

Examiner

Anthony Quash

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 13.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Applicant's request for reconsideration of the finality of the rejection of the last Office action, paper number 10, is persuasive and, therefore, the finality of that action is withdrawn.

The information disclosure statement filed 8/6/03 fails to comply with 37 CFR 1.97(d) because it lacks a statement as specified in 37 CFR 1.97(e). It has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,3-4,6, are rejected under 35 U.S.C. 102(b) as being anticipated by Atkinson [537]. As per claim 1, Atkinson [537] teaches an apparatus for transporting from an ionization source region to a first pressure region within a mass spectrometer, wherein the apparatus comprises first and second capillary sections each having an inlet end and an outlet end, a union having first and second openings, the union configured to removably interface the first capillary section to the second capillary section such that ions may be delivered from the source region into the first pressure region, and the union comprising a sealing mechanism for sealing the connection

between the ionization source region and the first pressure region of the mass spectrometer. See Atkinson [537] abstract, figs. 1-2, col. 2 lines 1-30, col. 3 lines 50-65, col. 4 lines 1-60, col. 5 lines 1-20, 45-68, col. 6 lines 1-30, 53-68, col. 7 lines 1-2, and col. 8 lines 10-15.

As per claim 3, Atkinson [537] teaches the union comprising means for removably securing the ends of the first and second sections. See Atkinson [537] fig. 2, col. 5 lines 45-68, and col. 6 lines 1-30.

As per claim 4, Atkinson [537] teaches the union comprising means for providing an airtight seal between the ends of first and second sections within the union. See Atkinson [537] abstract, figs. 1-2, col. 2 lines 1-30, col. 3 lines 50-65, col. 4 lines 1-60, col. 5 lines 1-20, 45-68, col. 6 lines 1-30, 53-68, col. 7 lines 1-2, and col. 8 lines 10-15.

As per claim 6, Atkinson [537] teaches the apparatus maintains pressure conditions in the first pressure region of the mass spectrometer. See Atkinson [537] abstract, figs. 1-2, col. 2 lines 1-30, col. 3 lines 50-65, col. 4 lines 1-60, col. 5 lines 1-20, 45-68, col. 6 lines 1-30, 53-68, col. 7 lines 1-2, and col. 8 lines 10-15.

Claims 16-17,19-20,24 are rejected under 35 U.S.C. 102(b) as being anticipated by Atkinson [537]. As per claim 16, Atkinson [537] discloses a system for performing mass spectrometric analysis, wherein the system comprises at least one ion source for producing ions, a mass spectrometer having an inlet orifice configured to accept the ions, a multiple part capillary device configured to provide a removable interface between the ion source and a first vacuum region of the mass spectrometer, wherein the removable interface maintains pressure conditions of the mass spectrometer.

Atkinson [537] abstract, figs. 1-2, col. 2 lines 1-30, col. 3 lines 50-65, col. 4 lines 1-60, col. 5 lines 1-20, 45-68, col. 6 lines 1-30, 53-68, col. 7 lines 1-2, and col. 8 lines 10-15.

As per claim 17, Atkinson [537] discloses a system wherein the multiple part capillary device comprises a first capillary section including an inlet orifice for accepting ions from the ion source, a union for connecting to at least the first capillary section, a second capillary section connected to the union, and a sealing mechanism for sealing the removable interface between the ion source and the mass spectrometer. See Atkinson [537] abstract, figs. 1-2, col. 2 lines 1-30, col. 3 lines 50-65, col. 4 lines 1-60, col. 5 lines 1-20, 45-68, col. 6 lines 1-30, 53-68, col. 7 lines 1-2, and col. 8 lines 10-15.

As per claim 19, Atkinson [537] discloses at least one of the first and second capillary sections being insulating. See Atkinson [537] col. 3 lines 55-62, and col. 5 lines 50-65.

As per claim 20, Atkinson [537] discloses at least one of the first and second capillary sections being metallic. See Atkinson [537] col. 3 lines 55-62, and col. 5 lines 50-65.

As per claim 24, Atkinson [537] discloses a system wherein the mass spectrometer is selected from the group consisting of a quadrupole mass spectrometer, a time-of-flight mass spectrometer, an ion trap mass spectrometer, an ion cyclotron resonance mass spectrometer, and a magnetic sector mass spectrometer. See Atkinson [537] col. 5 lines 1-10 and col. 8 lines 10-15.

Claims 25,27 are rejected under 35 U.S.C. 102(b) as being anticipated by Atkinson [537]. As per claim 25, Atkinson [537] discloses a method for performing

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mass analysis using at least one mass spectrometer, wherein the method comprises the steps of generating ions in an ion source region, providing a multiple part capillary having a removable interface between the ion source region and a first pressure region of the mass spectrometer while maintaining pressure conditions of the first pressure region of the mass spectrometer, delivering the ions from the ion source region into a first pressure region of the at least one mass spectrometer via the multiple part capillary device and performing at least one mass analysis on the ions in the at least one mass spectrometer. See Atkinson [537] abstract, figs. 1-2, col. 2 lines 1-30, col. 3 lines 50-65, col. 4 lines 1-60, col. 5 lines 1-20, 45-68, col. 6 lines 1-30, 53-68, col. 7 lines 1-2, and col. 8 lines 10-15.

As per claim 27, Atkinson [537] discloses the mass analysis being performed using a mass analyzer selected from the group consisting of a quadrupole mass spectrometer, a time-of-flight mass spectrometer, an ion trap mass spectrometer, an ion cyclotron resonance mass spectrometer, and a magnetic sector mass spectrometer. See Atkinson [537] col. 5 lines 1-10 and col. 8 lines 10-15.

Claims 16,23 are rejected under 35 U.S.C. 102(b) as being anticipated by Sharp [963]. As per claim 16, Sharp [963] discloses a system for performing mass spectrometric analysis wherein the system comprises at least one ion source for producing ions, a mass spectrometer having an inlet orifice configured to accept the ions, and a multiple part capillary device configured to provide a removable interface between the ion source and a first vacuum region of the mass spectrometer, wherein the removable interface maintains pressure conditions of the mass spectrometer. See

Sharp [963] abstract, figs. 1-2, 4-9, col. 2 lines 25-69, col. 4 lines 45-68, col. 5 lines 20-55, col. 6 lines 15-55, col. 7 lines 1-5, 55-69, col. 8 lines 10-69, col. 9 lines 55-65.

As per claim 23, Sharp [963] discloses at least one source being selected from the group consisting of an electrospray ion source, an atmospheric pressure ionization source, a matrix-assisted laser desorption/ionization ion source, a pneumatic assisted electrospray source, an electron impact source, a chemical ionization source, a plasma desorption source, and a liquid chromatography source. See Sharp [963] col. 3 lines 40-45.

Claims 25,26 are rejected under 35 U.S.C. 102(b) as being anticipated by Sharp [963]. As per claim 25, Sharp [963] discloses a method of performing mass analysis using at least one mass spectrometer, wherein the method comprises the steps of generating ions in an ion source region, providing a multiple part capillary having a removable interface between the ion source region and a first pressure region of the mass spectrometer while maintaining pressure conditions of the first pressure region of the mass spectrometer, delivering the ions from the ion source region into a first pressure region of at least one mass spectrometer via the multiple part capillary device, and performing at least one mass analysis on the ions in the at least one mass spectrometer. See Sharp [963] abstract, figs. 1-2, 4-9, col. 2 lines 25-69, col. 4 lines 45-68, col. 5 lines 20-55, col. 6 lines 15-55, col. 7 lines 1-5, 55-69, col. 8 lines 10-69, col. 9 lines 55-65.

As per claim 26, Sharp [963] discloses at least one source being selected from the group consisting of an electrospray ion source, an atmospheric pressure ionization

source, a matrix-assisted laser desorption/ionization ion source, a pneumatic assisted electrospray source, an electron impact source, a chemical ionization source, a plasma desorption source, and a liquid chromatography source. See Sharp [963] col. 3 lines 40-45

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sharp [963]. As per claim 1, Sharp [963] teaches an apparatus for transporting ions from an ionization source region to a first pressure region within a mass spectrometer, wherein the apparatus comprises a first and second capillary sections each having an inlet end and an outlet end, and a union (6) having first and second openings, the union configured to removably interface the first capillary section to the second capillary section such that ions may be delivered from the source region into the first pressure region. See Sharp [963] abstract, figs. 1-2, 4-9, col. 2 lines 25-69, col. 4 lines 45-68, col. 5 lines 20-55, col. 6 lines 15-55, col. 7 lines 1-5, 55-69, col. 8 lines 10-69, col. 9 lines 55-65. However, Sharp [963] does not specifically teach the union comprising a sealing mechanism for sealing the connection between the ionization source region and the first pressure region of the mass spectrometer. However, Sharp [963] does teach

the union being sealed by having the union and capillaries slide/(press fit) into one another. See Sharp [963] figs. 6-8, col. 6 lines 15-45, col. 7 lines 55-69, col. 8 lines 10-40, col. 14 lines 5-15, and col. 15 lines 25-36. Since the sliding/(press fitting) of the union into the capillaries produces a seal, it is the examiners view that that Sharp [963] teaches an equivalent structure known in the art. Therefore, because these two sealing means were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute a sealing mechanism for sealing the connection between the ionization source region and the first pressure region of the mass spectrometer for the sliding/(press fit) means in Sharp [963].

Claim 2, is rejected as being dependent upon a previously rejected base claim.

As per claim 3, Sharp [963] teaches the union comprising means for removably securing the ends of the first and second sections. See Sharp [963] figs. 6-8, col. 6 lines 20-40, and col. 14 lines 1-15.

As per claim 4, Sharp [963] teaches the union comprising means for providing an airtight seal between the ends of the first and second sections within the union. See Sharp [963] figs. 6-8, col. 14 lines 5-15, and col. 15 lines 20-35.

As per claim 5, Sharp [963] teaches the all aspects of the claimed invention except that Sharp [963] teaches the capillaries being made of metal instead of the capillaries having the inlet ends and outlet ends comprising conductive end caps. Sharp [965] shows that the capillaries comprised of metal is an equivalent structure known in the art. See Sharp [963] col. 9 lines 55-65. Therefore, because these two conductive means were art-recognized equivalents at the time the invention was made, one of

ordinary skill in the art would have found it obvious to substitute the conductive end caps for the metal composition of the capillaries in Sharp [963].

As per claim 6, Sharp [963] teaches the apparatus maintaining pressure conditions in the first pressure region of the mass spectrometer. See Sharp [963] col. 2 lines 25-30, col. 6 lines 20-45, and col. 7 lines 55-68.

As per claims 7-14, Sharp [963] teaches all aspects of the claims except for specifically stating the ion source be an API, ESI, pneumatic assisted electrospray, electron impact source, chemical ionization source, matrix assisted laser desorption ionization source, plasma desorption source, or liquid chromatography. Since the main difference in the sources is in how the ions are produced, and not in how the ions are conveyed to the mass spectrometer. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the ionization source be an API, ESI, pneumatic assisted electrospray, electron impact source, chemical ionization source, matrix assisted laser desorption ionization source, plasma desorption source, or liquid chromatography, since it has been held to be within the general skill of a worker in the art to select source of ions on the basis of its suitability for the intended use as a matter of obvious design choice.

Claim 15 is rejected as being dependent upon a previously rejected base claim.

Claims 17-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sharp [963]. As per claim 17, Sharp [963] teaches the multiple part capillary device comprising a first capillary section including an inlet orifice for accepting ions from the ion source, a union for connecting to at least the first capillary section, and a second

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capillary section connected to the union. See Sharp [963] abstract, figs. 1-2, 4-9, col. 2 lines 25-69, col. 4 lines 45-68, col. 5 lines 20-55, col. 6 lines 15-55, col. 7 lines 1-5, 55-69, col. 8 lines 10-69, col. 9 lines 55-65. However, Sharp [963] does not specifically a sealing mechanism for sealing the removable interface between the ion source and the mass spectrometer. However, Sharp [963] does teach the union being sealed by having the union and capillaries slide/(press fit) into one another. See Sharp [963] figs. 6-8, col. 6 lines 15-45, col. 7 lines 55-69, col. 8 lines 10-40, col. 14 lines 5-15, and col. 15 lines 25-36. Since the sliding/(press fitting) of the union into the capillaries produces a seal, it is the examiners view that that Sharp [963] teaches an equivalent structure known in the art. Therefore, because these two sealing means were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute a sealing mechanism for sealing the removable interface between the ion source and the mass spectrometer for the sliding/(press fit) means in Sharp [963].

Claim 18 is rejected as being dependent upon a previously rejected base claim.

As per claim 19, Sharp [963] teaches at least one of the first and second capillary sections being insulating. See Sharp [963] col. 9 lines 55-65.

As per claim 20, Sharp [963] teaches at least one of the first and second capillary sections being metallic. See Sharp [963] fig. 9 lines 55-65, and col. 12 lines 40-50.

As per claim 21, Sharp [963] teaches at least one of the first and second capillary sections comprising a flexible tube. See Sharp [963] col. 5 lines 20-35.

As per claim 22, Sharp [963] teaches at least one of the first and second capillary sections comprising a heated capillary tube. See col. 8 lines 28-35.

Response to Arguments

Applicant's arguments with respect to claims 1-27 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 5,756,994 to Bajic is considered pertinent to the applicant's disclosure because of its discussion on electrospray and atmospheric pressure chemical ionization mass spectrometer and ion source.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Quash whose telephone number is (703)-308-6555. The examiner can normally be reached on M-F from 9 a.m. to 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee, can be reached on (703)-308-4116. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-0956.



A. Quash 8/27/03



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